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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/801,720

03/17/2004

Kenta Shiga

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7590

08/29/2007

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ALEXANDRIA, VA 22314

EXAMINER

MEUCCI, MICHAEL D

ART UNIT

PAPER NUMBER

2142

MAIL DATE

DELIVERY MODE

08/29/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/801,720

**Applicant(s)**

SHIGA ET AL.

**Examiner**

Michael D. Meucci

**Art Unit**

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9,10,12-16 and 18-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9,10,12-16 and 18-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/25/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This action is in response to the Request for Continued Examination (RCE) filed 25 June 2007.
2. Claims 1, 3-7, 9, 10, 12-16, and 18-38 are currently pending.

### ***Claim Objections***

3. Regarding claim 14, the full term --Explicit Congestion Notification-- should be used in place of "ECN."
4. Regarding claims 25-31, it appears that the applicant meant to specify --means for managing a ratio change flag-- in place of "means for managing ratio a change flag," on line 2 of each claim. Correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 25-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - a. Claims 25-31 recite the limitation "updating the predetermined ratio in the path management table," in lines 4-5 of each claim. There is insufficient antecedent basis for this limitation in the claim. The predetermined ratio cannot be updated in the

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path management table because the path management table is not previously disclosed.

b. Claims 32-38 recite the limitation "the path" in line 2 of each claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3, 4, 6, 7, 9, 10, 12-16, 18-24, and 32-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. (U.S. 6,259,705 B1) hereinafter referred to as Takahashi.

a. Regarding claim 1, Takahashi teaches: a first device; a second device; a plurality of paths connected between the first device and the second device; and a third device which is connected to the first device (lines 18-36 of column 5), wherein the first device transfers data to the second device using the plurality of paths at a predetermined ratio defining an amount of communications to be allocated on each of the plurality of paths relative to a total amount of communications on all of the paths so that communication loads on each of the plurality of paths are balanced (lines 18-36 of column 5), wherein the third device detects congestion of the plurality of paths and notifies the first device of the congestion (lines 31-36 of column 5), wherein the first

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device changes the predetermined ratio of each of the paths, thereby changing the weighting of an amount of communications to be allocated to each of the plurality of paths, based on notification from said third device of the congestion on the plurality of paths; wherein the first device transfers data to the second device using the plurality of paths according to the changed predetermined ratio (lines 34-36 of column 5); wherein said first device and the second device are storage devices (lines 5-11 of column 19); wherein the third device has information on the predetermined ratio and a change rate to be applied to the predetermined ratio to compute the changed predetermined ratio, when a change in the predetermined ratio is required (lines 28-36 of column 5); wherein the third device, when congestion of the plurality of paths has been detected, computes the changed predetermined ratio on each of the paths based on the change rate, and sends information on the changed predetermined ratio to the first device (lines 28-36 of column 5); and wherein the first device transfers data to the second device using the plurality of paths based on the changed predetermined ratio on each of the paths (lines 25-28 and lines 33-36 of column 5).

b. Regarding claim 4, Takahashi discloses: wherein each of the plurality of paths has a network device for connecting the first device and the second device (lines 55-60 of column 18).

c. Regarding claim 6, Takahashi teaches: wherein each of the plurality of paths has a network device for connecting the first device and the second device, wherein the third device is connected to the network device via a network, and wherein third device receives information on a discarded packet in the network device from the

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network device via the network and judges congestion of the plurality of paths based on the information on the discarded packet (lines 23-34 of column 2)

d. Regarding claim 7, Takahashi teaches: in the case in which the number of discarded packets received from the network device is larger than the number of discarded packets received previously, the third device judges that congestion has occurred in the plurality of paths having the network device (lines 6-15 of column 6).

e. Regarding claim 9, Takahashi teaches: when the third device detects recovery from congestion of the plurality of paths, computes the changed predetermined ratio among the paths based on the changes rate, and sends information on the changed predetermined ratio among paths to the first device (lines 28-36 of column 5); and wherein the first device transfers data to the second device using a plurality of paths based on the changed predetermined ratio among paths (lines 25-28 and lines 33-36 of column 5).

f. Claims 3, 10, 12, 13, 14 19, 20, and 21 contain similar limitations as those disclosed in claim 1 and are rejected under the same rationale.

g. Regarding claim 15, Takahashi teaches: in the case in which a response is not returned from the second device for a predetermined period, the first device judges that congestion has occurred in the plurality of paths (lines 15-19 of column 6).

h. Regarding claim 16, Takahashi teaches: in the case in which an acknowledgement of the data sent to the second device has been received redundantly, the first device judges that congestion has occurred in the plurality of paths (lines 47-54 of column 9).

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i. Regarding claim 18, Takahashi teaches: wherein, when a data size, which can be sent to the plurality of paths in which the congestion has occurred, has exceeded a value set in advance after the congestion occurrence, the first device judges that the plurality of paths has recovered from the congestion (lines 16-21 of column 11).

j. Claims 22-24 contain similar limitations as those disclosed in claims 15, 16, and 18 and are rejected under the same rationale.

k. Regarding claims 32-38, Takahashi teaches: a function for recovering the path using the predetermined ration for said path (lines 9-13 of column 13).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi as applied to claim 1 above, in view of Bare (U.S. 6,456,597 B1).

a. Regarding claim 5, Takahashi does not explicitly teach: wherein the notification is a notification based upon SNMP trap. However, Bare discloses: "an implementation would block all the ports where it sees its own switch ID and log a message to the system manager and/or send an SNMP trap to any network management stations," (lines 56-59 of column 20). It would have been obvious for one

of ordinary skill in the art at the time of the applicant's invention to have a notification based upon SNMP trap. "Implementations that do not allow this could alternatively give the user a configuration parameter that turns off load balancing on some specific ports and allow the spanning-tree protocol to be run. This would allow the user still to configure the same topology with only a minor amount of required configuration," (lines 59-65 of column 20 in Bare). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have a notification based upon SNMP trap in the system as taught by Takahashi.

11. Claims 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi as applied to claims 1, 3, 10, 12, 19, 20, and 21 above, in view of Bare.

a. Regarding claims 25-31, Takahashi teaches: means for managing a ratio change rate by use of a task management table, managing a default ratio and a changed ratio by use of a path management table and updating the predetermined ratio in the path management table in accordance with the change rate in the task management table (lines 18-36 of column 5). Takahashi does not explicitly teach: a ratio change flag. However, Bare discloses: "For example, a first bit of the reserved bytes 408 has been allocated as a flag associated with a type 1 query (described below)," (lines 54-56 of column 14). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have a ratio change flag. "A type 1 query is used in special circumstances to update cost and path information in an edge switch when failure recovery techniques of the present invention chose an alternate



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path in response to sensing failure of a presently preferred path between switches," (lines 56-60 of column 14 in Bare). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have a ration change flag in the system as taught by Takahashi.

### ***Response to Arguments***

12. Applicant's arguments filed 25 June 2007 have been fully considered but they are not persuasive.

13. (A) Regarding claim 1, the applicant contends that Takahashi does not teach managing the predetermined ratios defined as a ration of an amount of data transfers on each of the paths relative to the total amount of data transferred on all of the paths and managing a change rate of the predetermined ratio. The examiner respectfully disagrees.

As to point (A), the applicant argues that because the predetermined ratio and predetermined ratio change rate can be changed for each path, there is a unique advantage that data transfer can be effectively conducted using multiple paths having different bandwidths and qualities. The examiner points to lines 18-36 of column 5 in Takahashi which recite: "A first embodiment of the present invention is directed to a network load balancing device which, for use with a system in which data is transferred from a first control unit to a plurality of second control units over a network, comprises a conversion information storage unit which stores conversion information that represents

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a correspondence relationship of the first control unit to the second control units, a distributive relay unit which transfers data from the first control unit to one or more of the second control units on the basis of the correspondence relationship stored in the conversion information storage unit, a distribution ratio adjusting unit which adjusts the correspondence relationship information stored in the conversion information storage unit, and a load measurement unit which measures the load conditions of the respective second control units and notifies the distribution ratio adjusting unit of the measured load conditions to allow the balancing unit to balance the correspondence relationship of the first control unit to the second control units.” From this recitation in Takahashi, one of ordinary skill in the art at the time of the applicant’s invention would have readily recognized that the distribution ratio adjusting unit which adjusts the correspondence relationship information stored in the conversion information storage unit manages the predetermined ratios of the applicant’s system. As such, the rejection remains proper and is maintained by the examiner.

14. (B) The applicant’s remaining arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Generally, the applicant argues that Takahashi does not teach the entirety of claim 1 without asserting any specific limitations and making no differentiation between the applicant’s invention and the prior art of record.

***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Meucci at (571) 272-3892. The examiner can normally be reached on Monday-Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell, can be reached at (571) 272-3868. The fax phone number for this Group is 571-273-8300.

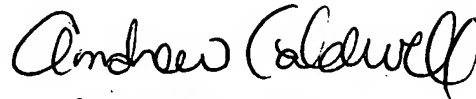
Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [michael.meucci@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "Andrew Caldwell". The signature is fluid and cursive, with the first and last names being more prominent.

ANDREW CALDWELL  
SUPERVISORY PATENT EXAMINER